

II. SPECIFICATION AMENDMENTS

Please replace the paragraph beginning on page 9, line 26 through page 10, line 19 as rewritten below:

Substrate station 140 has a magazine door drive 235, shown in a retracted position, for sealing aperture 270 when magazine opening 310 is not abutting seal 275, and for coupling to and removing magazine door 315 when magazine opening 310 is abutting seal 275. Magazine door drive 235 includes an aperture closure 230 mounted on an extendable member 280 which is operated for both translation and pivoting movement by magazine door drive 235. When in an extended position, as shown in Figure 6A, aperture closure 230 seals aperture 270. Returning to Figure 2, aperture closure includes a door transport 285 for operating latch operating mechanism 340 (Figure 3) so as to lock or release magazine door 315 from magazine 210 and to support magazine door 315 during translation and pivoting movements. Door transport 285 includes selectively operable door supports (not shown) which are engageable with magazine door 315 when magazine opening 310 is in abutting relationship with seal 275. Magazine 210, shield 290, aperture 270, and magazine door drive 235 are preferably located proximate a central area 264 of substrate station 140. In alternate embodiments, the area in which magazine 210, shield 290, aperture 270, and magazine door drive 235 are located may not be central.

Please replace the paragraph beginning on page 12, line 8 through page 12, line 24 as rewritten below:

Turning now to Figure 7, buffer transport 225 is adapted to move the one or more magazines 210 along the X-axis. Buffer

transport 225 may be any suitable mechanism for transporting magazines 210 along the X axis, but is preferably a shelf 610, guided by a rail 615 aligned with the X axis, coupled to a drive mechanism 620. Buffer transport 225 may include a screw, belt, carriage, or any type of driving or movement mechanism. In an embodiment where substrate station 140 includes a plurality of magazines 210, 210A, 210B, magazines 210A, 210B function as one or more substrate buffers, thus enabling the temporary storage or holding of substrates 425 either before or after processing. Buffer transport 225 is further operable to move individual magazines to and from peripheral areas 650A, 650B and into and out of central area 264.

Please replace the paragraph beginning on page 14, line 30 through page 15, line 8 as rewritten below:

Example operations of substrate station 140 are described as follows with reference to Figures 2 and 6-9. In one example, operations may begin with aperture closure 230 in an extended position (Figure 6A), effectively sealing aperture 270. Buffer transport 225 then operates to move a magazine 210 with a locked magazine door 315 along the X-axis from peripheral area 650A or 650B into central area 264. Shuttle 220 then operates to move magazine 210 in a forward Y direction until magazine opening 310 sealingly abuts seal 275.

Please replace the paragraph beginning on page 16, line 4 through page 16, line 29 as rewritten below:

As shown in Figure 9, elevator 215 then returns magazine 210 to a known height in central area 264, positioning a particular substrate 425 in wafer transfer plane 265, which is a plane that

is accessible by transport apparatus 115. Isolation valve 240 may be opened at this time if not previously opened. Transport apparatus 115 may then extend end effector 135 into magazine 210 to remove substrate 425. Because the substrates have been mapped by sensor 245, the location of each substrate 425 is known and elevator 215 may subsequently move magazine 210 such that a particular substrate is positioned in wafer transfer plane 265 for removal by transport apparatus 115 without any significant Z-axis movement by transport apparatus 115. Transport apparatus 115 may then replace substrates 425 in magazine 210 in a similar fashion, where elevator 215 moves magazine 210 such that a particular support plate 420 (Figure 4) of magazine 210 is situated adjacent wafer transfer plane 265, allowing transport apparatus 115 to replace a previously removed substrate or to place another substrate in magazine 210. Substrate station 140 may coordinate the movements of elevator 215 with the movements of transport apparatus 115 such that substrates 425 may be removed from or placed into magazine 210 in any desirable order or location.

Please replace the paragraph beginning on page 17, line 10 through page 17, line 18 as rewritten below:

Buffer transport 225 may then move magazine 210 to one of the peripheral areas for example, 650B (Figure 6), and then move magazine 210A from peripheral area 650A to central area 264 for processing the substrates therein. As mentioned above, buffer transport is capable of moving any one of the magazines among peripheral areas 650A, 650B, and central area 264 as required for loading, unloading, and processing of substrates.

Please replace the paragraph beginning on page 19, line 21 through page 20, line 4 as rewritten below:

Figure 11 shows yet another embodiment of the invention where sensor 245 is part of magazine door drive 235 and encoder 1000 may also be a part of magazine door drive 235. Encoder 1000 may be any type of encoder capable of providing information regarding the position of the magazine door drive 235, and may be located anywhere within system 100. As mentioned above, encoder 1000 may be an optical encoder that may operate to read a scale 1010 to determine position information. An exemplary mapping operation may be performed by operating magazine door drive 235 while monitoring an output of encoder 1000 and an output of sensor 245. As sensor 245 detects an individual substrate, the position of magazine door drive 235 as reported by encoder 1000 may be processed with the output of sensor 245 to determine substrate positions.

Please replace the paragraph beginning on page 20, line 5 through page 20, line 21 as rewritten below:

Thus, substrate station 140 is capable of holding a buffer of substrates 425 for processing, disposition after processing, or storage. Sensor 245 is capable of mapping the location and features of substrates 425 while situated near magazine 210, preferably positioned in central area 264. Buffer transport 225, shuttle 220, and elevator 215 are capable of operating together to position one or more magazines 210, and thus the substrates therein, at any position within their combined range of motions. One advantage of these mapping and positioning capabilities is the ability to place each substrate at the wafer transfer plane 265, eliminating the need for any significant Z-

axis movement by transport apparatus 115. Substrate station 140 is capable of being mated directly to transport chamber 120, thus eliminating the need for a front end for substrate alignment and placement.